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ABSTRACT

Federal legislation authorizing the creation of the National Research and Education Network (NREN)--i.e., the High-Performance Computing Act of 1991 (P.L. 102-194)--was signed into law by the President in December 1991. This network is envisioned as an expansion and enhancement of the existing U.S. Internet, the collection of interconnected computer networks that is currently used by over one million U.S. researchers, educators, students from K-12 to postgraduate levels, and others. This digest reports on the current status of Federal policy initiatives related to the NREN and discusses trends and issues in electronic networking that are of interest to members of the education and library communities. The digest lists important features of the Federal Government's plans for funding, creating, and managing the NREN. It is noted that the government hopes the development of the NREN will enhance national productivity and competitiveness as well as speed scientific and technical advances in a number of fields. It is argued that the potential of the NREN to dramatically change the nature of education and scholarship is becoming more apparent, particularly when the library and education communities are continuing to expand their use of electronic networks. The digest concludes by indicating types of issues involved in the transition to a networked information environment, and some technology trends that could have an impact on networking. (9 references) (MAB)

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ERIC DIGEST

December 1991 EDO-IR-91-9

The National Research and Education Network (NREN): Update 1991

By Ann P. Bishop

This digest updates *The National Research and Education Network (NREN): Promise of a New Information Environment*, by Ann P. Bishop.

This digest reports on the current status of Federal policy initiatives related to the National Research and Education Network (NREN) and discusses trends and issues in electronic networking that are of interest to members of the education and library communities. The NREN is envisioned as an expansion and enhancement of the existing U.S. Internet, the collection of interconnected computer networks that is currently used by over one million United States researchers, educators, students from K-12 to postgraduate levels, and others.

Status of Federal NREN Initiatives

Legislation authorizing the creation of what has been referred to as an electronic "information superhighway" was first introduced by Senator Albert Gore in 1988. The latest version of the NREN legislation, called the High-Performance Computing Act of 1991 (P.L. 102-194), finally passed both houses of Congress on November 22, 1991 and was signed into law by the President on December 9, 1991. In addition to establishing the NREN, the Act calls for the implementation of a government research and development program in advanced computing technology and applications. It serves, for the most part, to mandate goals and strategies that are already being pursued in the executive branch under the name of the High Performance Computing and Communications (HPCC) Program. The HPCC Program is outlined in a 1991 report entitled *Grand Challenges: High Performance Computing and Communications*, issued by the Office of Science and Technology Policy.

The intent of both the legislative and executive branch initiatives is to improve the information, computing, and communications infrastructure for the country's researchers and educators, while at the same time promoting the development of new computing and communications technologies. The government hopes that such efforts will enhance national productivity and competitiveness as well as speed scientific and technical advances in a number of fields. Important features of the Federal government's plans for funding, creating, and managing the NREN include:

- Appropriations of at least $1 billion to implement a high-speed network linking educational and research institutions in all fifty states in order to facilitate communication, computation, and access to information resources and research equipment;
- Cooperation with the private sector in developing NREN technologies and providing electronic information products and services;
- Designation of the National Science Foundation as lead agency for providing networking infrastructure support and information on NREN access and use;
- Federal assistance for schools and libraries unable to take advantage of private sector NREN connections;
- Provision of information services related to the NREN—such as directories, user training, and access to commercial information services—and technology designed to support computer-based collaboration;
- Use of the NREN for improving the dissemination of information stored in government databases;
- Development of standards related to networking and of mechanisms for ensuring intellectual property protection, assessing and collecting user fees, guiding the eventual transition to commercial use, and maintaining security and privacy;
- Recognition of the need to educate more students in library and information science, as well as in computing and computational disciplines; and
- Establishment of an advisory committee—to include representatives from industry, network providers, and research, education, and library communities—whose mission is to assess Federal initiatives in high-performance computing and communications.

Government plans for the NREN have evolved over the past year or so to include a much greater emphasis on educational and library perspectives. Due in large part to successful lobbying efforts by organizations and coalitions representing these communities, NREN policy statements contain more language on, for example, the importance of providing access for educational institutions of all levels and locations, the need to promote shared access to information resources by linking users to libraries and databases, and the importance of promoting NREN applications such as digital libraries and distance education.

It should be remembered that both legislative and executive policy statements only outline, in broad strokes, government plans and

strategies related to the NREN. Within this framework, a number of important controversies remain to be resolved, some of which are suggested by the list of NREN policy features presented above. Individual agencies and other key players will make specific decisions that will affect the actual use of the NREN. The National Science Foundation, for example, will be issuing new contracts in 1992 for both the management of NSFNET (a high-speed national network that serves as the backbone to the U.S. Internet) and the provision of network information services. In addition, it will be chiefly responsible for deciding how funds for NREN connections will be allocated among individuals, institutions, and various network service providers.

Growth of Network Use in the Education and Library Communities

It is clear that the education and library communities are continuing to expand their use of electronic networks. Researchers, students, librarians, and educators subscribe to electronic conferences, newsletters, and journals on a wide range of topics of concern to them in their work. They use electronic mail to communicate with remote colleagues; file transfer to acquire a variety of public domain information resources, such as software and full-text files; and remote login to access supercomputers. In addition, members of the library and education communities are contributing to the creation of electronic information resources and services. For example, many library catalogs and databases created originally for local use are currently available over the Internet. Further, some librarians and educators are an important source of network training and support for their clientele.

As new users and applications are brought online, the potential of computer networks to dramatically transform the nature of education and scholarship is becoming more apparent. In some cases, computer networks are used to make existing processes more efficient, e.g., putting library card catalogs online and disseminating memos from teachers to students. But in other cases, networking is being used to create new relationships, processes, services, and products. For example, students may use electronic networks to learn another language by engaging in electronic conversations with distant peers who are native speakers, and libraries may create and "publish" electronic information resources over the network to an audience far broader than their traditional patron group. Both individuals and institutions are reexamining their goals, capabilities, roles, and responsibilities in learning and scholarly communication as their experience with the use of computer networks grows. Development of the NREN, obviously, has the potential to expand even further the use of computer networking services and products in schools, universities, and libraries.

Conclusions

Even with the passage of NREN legislation, the transition to a networked information environment will not be easy. Educational and research institutions, libraries, and publishers are faced with difficult social, economic, legal, ethical, and management issues in their attempts to incorporate the provision and use of network services within existing organizational structures and operations. With networking policies, technologies, and user expectations in seemingly constant flux, these issues become even more difficult to resolve. Important policy changes include the recent Supreme Court decision allowing regional Bell operating companies to begin providing commercial information services. Technology trends that could have a tremendous impact on networking include the proliferation of multimedia applications and the development of standards and user-friendly interfaces for information search and retrieval.

Further Reading

Bishop, Ann P. (1990, November). *The National Research and Education Network (NREN): Promise of a new information environment.* Syracuse, NY: ERIC Clearinghouse on Information Resources. (EDO-IR-90-4). ERIC Document number ED 327 219.

EDUCOM Review. (1991). Special double issue. 26(3/4).

Lynch, Clifford A. (1991). The development of electronic publishing and digital library collections on the NREN. *Electronic Networking: Research, Applications, and Policy,* 1(2), 6-22.

Mabrito, Mark. (1990). Annotated bibliography of resources in computer networking. *Computers and Composition,* 7(4), 23-39.

McClure, Charles R., Bishop, Ann P., Doty, Philip, & Rosenbaum, Howard. (1991). *The National Research and Education Network: Research and policy perspectives.* Norwood, NJ: Ablex.

Okerson, Ann (Ed.). (1991). *Directory of electronic journals, newsletters, and academic discussion lists.* Washington, DC: Association of Research Libraries.

Scientific American. (1991). Special issue: Communications, computers, and networks. 265(3).

Tennant, Roy. (1991). Internet basic training: Teaching networking skills in higher education. *Electronic Networking: Research, Applications, and Policy,* 1(2), 37-46.

U.S. Office of Science and Technology Policy. (1991). *Grand challenges: High performance computing and communications, the FY 1992 U.S. research and development program.* Washington, DC: OSTP.

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